

## REMARKS

Claims 1-20, and 23 are pending, with claims 1, 11, and 23 being independent. Claim 23 is newly added. Claims 21-22 have been cancelled, and claims 1 and 11 have been amended. The Office's objections to the Specification has been addressed. No new matter has been added. Reconsideration and allowance of the above-referenced application are respectfully requested.

### Objections to the Title

The title of this application was objected to for allegedly not being descriptive. The amended title of "Scheduling Parallel Services Using Data Flow Analysis" is sufficiently informative and descriptive for indexing, classifying, and searching purposes (*see, e.g.*, MPEP § 606.01). Therefore, withdrawal of the objection to the title is respectfully requested. If the examiner disagrees, the examiner is free to change the title.

### Rejections Under 35 U.S.C. §102

Claims 1-3, 11-13 stand rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,662,203 issued to Kling et al. (hereinafter "Kling"). Kling does not disclose each and every element of claim 1. For example, while the cited portions of Kling (FIGs. 2A & 2B) describe the utilization of the multiprocessing system for processing a number of jobs at the highest priority level, Kling does not disclose "determining an element ratio that defines a portion of data elements processed by each of the parallel services" as recited in claim 1, because nowhere in the cited figures of Kling or accompanying description is there any disclosure of the **number of jobs at lower priority levels**, let alone determining any kind of ratio between the highest priority level jobs and lower priority level jobs.

Claim 1 makes explicit that a ratio of data elements be determined in order to define a portion of data elements processed by each of the parallel services.<sup>1</sup> In sharp contrast, the cited

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<sup>1</sup> *See, e.g.*, paragraph [0032] of the application as filed, which states that "[r]eferring to FIGS. 5 and 6, parameter definition module 166 determines 200 an **element ratio based on the distribution of data packets between the parallel services** (e.g., services s3 and s4). As 1,500 of the 2,500 packets were sent to service s3 and 1,000 of the

figures of Kling merely disclose the highest priority level jobs processed by the multiprocessor system as a function of time.

Furthermore, contrary to the examiner's assertion, there is simply no correlation or disclosure in the cited figures that the lower priority level jobs correspond to synchronous jobs and that the highest priority level jobs correspond to the asynchronous jobs. In fact, the asynchronous signals do not corresponding to the highest priority level jobs because Kling discloses that the asynchronous signals has to be analyzed for priority levels.<sup>2</sup>

In addition, if the examiner's contention were true (i.e., the highest priority jobs correspond to asynchronous jobs and the lower priority jobs correspond to synchronous jobs), then the highest priority jobs of Kling would always be delayed and temporarily stored, whereas the lower priority jobs would get inserted directly into the job scheduler. This does not follow from Kling.<sup>3</sup> Therefore, because the highest priority asynchronous jobs would always be delayed, this interpretation would be contrary to the stated objective of Kling, which is to achieve a more efficient operation of the multiprocessing system. .

Moreover, contrary to the examiner's assertion that the cited figures of Kling disclose "means for determining an element ratio between the synchronous versus asynchronous jobs," (Aug. 7, 2007 Office Action at page 3) as noted above, FIGs. 2A & 2B do not disclose any numbers of synchronous or asynchronous jobs, and there is no mention of determining any ratio between the number of synchronous and asynchronous jobs.<sup>4</sup> Even if FIGs 2A & 2B can be interpreted to disclose a proportion of time units when the synchronous and asynchronous jobs are executed, which they cannot be so interpreted, the figures do not disclose portions of data elements processed by each of the parallel services. With all due respect, the proportion of time

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2,500 packets were sent to service s4, 60% of the data packets were sent to service s3 and 40% of the data packets were sent to service s4. Accordingly, the **element ratio** may be expressed in various formats, such a 60%:40%, 3:2, and 1,500:1,000, for example.

<sup>2</sup> See, e.g., col. 8, lines 41-44 of Kling, which discloses that "[w]hen an asynchronous signal arrives to the priority analysis unit 15, the **signal header is analyzed** and the delay queue into which the job signal should be placed is identified, and the job signal is subsequently stored therein. Each one of the job buffers 35A-C in the scheduler 30 is associated with a **predetermined priority level** for storing job signals of the corresponding priority level." (Emphasis Added).

<sup>3</sup> See, e.g., col. 3, lines 56-59 of Kling, which discloses that "the invention proposes temporarily storage and delay of the asynchronous job signals in the delay queue 20 to enable batch-wise acceptance of the delayed job signals for scheduling." See, also, col. 4, lines 1-2 of Kling, which discloses that "[s]ynchronous job signals, however, are normally inserted directly into the job scheduler in the order they arrive."

<sup>4</sup> In addition, Applicant has not expressed the limitations of the claims in means plus function format.

units disclosed by the cited figures in Kling are simply not the same as a portion of data elements, which relate to the number of data packets.

Thus, Kling does not disclose all the features of claim 1, and claim 1 should be in condition for allowance. Independent claim 11 and newly added claim 23 recite similar features as claim 1. Therefore, independent claims 11 and 23 are patentably distinguishable over Kling for at least similar reasons as discussed for independent claim 1. Claims 2-3 and 12-13 depend generally from claims 1 or 11. Thus these dependent claims are allowable for at least the reasons provided above.

### **Rejections Under 35 U.S.C. §103**

Claims 4, 9, 10, 14, 19 and 20 stand rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Kling in view of U.S. Patent No. 7,114,158 issued to Thompson et al. (hereinafter "Thompson"). This contention is respectfully traversed.

A *prima facie* case of obviousness for the rejected claims has not been established because the proposed Kling-Thompson combination does not teach or suggest all the elements of claims 4, 9, 10, 14, 19 and 20. As noted above, Kling does not teach the features of independent claims 1 and 11, and Thompson is neither asserted to show such claimed features nor is it believed to teach or suggest them. Since claims 4, 9, 10, 14, 19 and 20 depend generally from independent claims 1 or 11, claims 4, 9, 10, 14, 19 and 20 are patentably distinguishable over Kling or Thompson, either alone or in combination.

In addition, claims 4, 9, 10, 14, 19 and 20 are allowable for other reasons. For example, Thompson does not disclose "determining an average processing time for each of the parallel services" as recited in claim 4. While the cited portion of Thompson discloses that the average amount of time increases for processing a single request and that the overall processing time decreases, there is simply no disclosure whatsoever of **determining an average processing time** for each of the parallel services. This is because Thompson neither talks about determining the **total time** required to process a group of data elements or packets, nor does it disclose dividing the total time by the number of data elements or packets processed. Thus, claim 4 is allowable for this additional reason.

Claims 5 and 15 stand rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Kling in view of Thompson, and further in view of U.S. Patent No. 7,215,637 issued to Ferguson et al. (hereinafter "Ferguson"). This contention is respectfully traversed.

A *prima facie* case of obviousness for the rejected claims has not been established because the proposed Kling-Thompson-Ferguson combination does not teach or suggest all the elements of claims 5 and 15. As noted above, the proposed Kling-Thompson combination does not teach the features of dependent claims 4 and 14, and Ferguson is neither asserted to show such claimed features nor is it believed to teach or suggest them. Since claims 5 and 15 depend from claims 4 and 14, claims 5 and 15 are patentably distinguishable over Kling, Thompson, or Ferguson, either alone or in combination.

Claims 6 and 16 stand rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Kling in view of Thompson, further in view of Ferguson et al., and further in view of U.S. Patent No. 5,442,730 issued to Bigus (hereinafter "Bigus"). This contention is respectfully traversed.

A *prima facie* case of obviousness for the rejected claims has not been established because the proposed Kling-Thompson-Ferguson-Bigus combination does not teach or suggest all the elements of claims 6 and 16. As noted above, the proposed Kling-Thompson-Ferguson combination does not teach the features of dependent claims 5 and 15, and Bigus is neither asserted to show such claimed features nor is it believed to teach or suggest them. Since claims 6 and 16 depend from claims 5 and 15, claims 6 and 16 are patentably distinguishable over Kling, Thompson, Ferguson, or Bigus, either alone or in combination.

Claims 7, 8, 17 and 18 stand rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Kling in view of Thompson, further in view of Ferguson, further in view of Bigus, and further in view of U.S. Patent No. 6,625,161 issued to Su et al. (hereinafter "Su"). This contention is respectfully traversed.

A *prima facie* case of obviousness for the rejected claims has not been established because the proposed Kling-Thompson-Ferguson-Bigus-Su combination does not teach or suggest all the elements of claims 7, 8, 17 and 18. As noted above, the proposed Kling-Thompson-Ferguson-Bigus combination does not teach the features of dependent claims 6 and 16, and Su is neither asserted to show such claimed features nor is it believed to teach or suggest

them. Since claims 7, 8, 17 and 18 generally depend from claims 6 and 16, claims 7, 8, 17 and 18 are patentably distinguishable over Kling, Thompson, Ferguson, Bigus, or Su, either alone or in combination.

**Concluding Comments**

It is believed that all of the pending claims have been addressed in this paper. However, failure to address a specific rejection, issue or comment, does not signify agreement with or concession of that rejection, issue or comment. In addition, because the arguments made above are not intended to be exhaustive, there may be reasons for patentability of any or all pending claims (or other claims) that have not been expressed. Finally, nothing in this paper should be construed as an intent to concede any issue with regard to any claim, except as specifically stated in this paper, and the amendment of any claim does not necessarily signify concession of unpatentability of the claim prior to its amendment.

Applicants ask that all claims be allowed. Please apply applicable charges or credits to Deposit Account No. 06-1050.

Respectfully submitted,

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